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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/598,591

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Jorg Hinrich Fechner

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EXAMINER

ARNOLD, ERNST V

ART UNIT

PAPER NUMBER

1616

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/598,591	Applicant(s) FECHNER ET AL.	
	Examiner ERNST V. ARNOLD	Art Unit 1616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 September 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) 7-36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 December 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/5/06</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The Examiner acknowledges receipt of Applicant's election without prejudice of Group I, claims 1-6, in the response filed on 9/2/08. Claims 7-36 are withdrawn from consideration as being directed to non-elected subject matter. Accordingly, claims 1-6 are presented for examination on the merits.

Comment: Independent claims should begin with: "A..." and dependent claims should begin with: "The...".

Information Disclosure Statement

Foreign language documents have only been considered to the extent that an English language translation or abstract has been provided to the Examiner otherwise a line has been drawn through the reference.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

The drawings are objected to because text information in Figures 2, 4 and 5 cannot be read. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the

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immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then

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narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 5 recites the broad recitation <100 microns, and the claim also recites <2 microns which is the narrower statement of the range/limitation.

Claim 6 is rejected as indefinite because it is dependent on an indefinite base claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 2 and 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP11060277 in view of Hikata et al. (US 6410633).

Applicant claims a water insoluble silicate glass powder.

Determination of the scope and content of the prior art

(MPEP 2141.01)

JP11060277 teaches in the Abstract (Examiner added emphasis):



Abstract of JP11060277

PROBLEM TO BE SOLVED: To obtain a glass material having excellent antibacterial property for a long period of time and suitable as a building material by forming a surface layer comprising glass and an antibacterial agent on a substrate comprising crystalline glass. **SOLUTION:** This antibacterial crystalline glass material is obtained by forming a surface layer comprising glass and an antibacterial agent comprising ceramic carrying preferably at least one kind of metal of Ag, Cu, Zn, Pb, Hg and Sn or glass containing at least one kind of Ag, Cu and Zn in its composition on a substrate comprising crystalline glass having a composition composed of e.g. 40-60 wt.% of SiO₂, 10-25 wt.% of Al₂O₃, 0-12 wt.% of MgO, 0-12 wt.% of ZnO, 3-15 wt.% of MgO+ZnO, 2-15 wt.% of B₂O₃, 4-13 wt.% of Na₂O, respectively 0-5 wt.% of K₂O, CaO, BaO, TiO₂ and ZrO₂, 0.5-8 wt.% of TiO₂+ZrO₂ and respectively 0-1 wt.% of As₂O₃ and Sb₂O₃. Preferably, the glass in the surface layer is amorphous glass or crystalline glass.

Since the antibacterial agent is on the surface layer then it is concentrated in the regions of the glass particles that are near the surface. Furthermore, since the components are the same as instantly claimed and in the same amount, then water insolubility is intrinsic in the composition of JP11060277 in the absence of evidence to the contrary. Therefore, the concept of coating glass with an outer layer of antibacterial ions is already taught in the art.

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Hikata et al. teach antimicrobial glass powders with a particle size of 1 to 20 microns (claims 1-5). Glass powders are preferred because they achieve a good antibacterial function due to the larger surface area than fibers or flakes (column 2, lines 59-61).

Ascertainment of the difference between the prior art and the claims

(MPEP 2141.02)

1. The difference between the instant application and JP11060277 is that JP11060277 do not expressly teach the composition in the form of a powder of a particular powder size.

Finding of prima facie obviousness

Rational and Motivation (MPEP 2142-2143)

1. It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to a powder of the composition of JP11060277, as suggested by Hikata et al., and produce the instant invention.

One of ordinary skill in the art would have been motivated to do this because powder is merely a physical description of the material taught by JP11060277 and Hikata establish that antibacterial glass powders are not foreign to one of ordinary skill in the art of glass and Hikata teach that good antibacterial function is achieved with powders versus flakes or fibers.

With regards to the size limitations of instant claim 5, Hikata teaches particles from 1 to 20 microns which is embraced by the instant limitations and would therefore be a powder as defined by Applicant.

With regards to instant claim 6, the Examiner's first argument is that the glass could be ground by attritor in the absence of evidence to the contrary and secondly the instant claim reads on a product by process. Please note that in product-by-process claims, "once a product appearing to be substantially identical is found and a 35 U.S.C. 103 rejection [is] made, the burden shifts to the applicant to show an unobvious difference." MPEP 2113. This rejection under 35 U.S.C. 103 is proper because the "patentability of a product does not depend on its method of production." In re Thorpe, 227 USPQ 964, 966 (Fed. Cir. 1985). In addition, please note that the Patent and Trademark Office is not equipped to conduct experimentation in order to determine whether Applicants' attritor grinding of the glass into particles with a size of < 5 microns differs and, if so, to what extent, from that of the discussed reference. Therefore, with the showing of the reference, the burden of establishing non-obviousness by objective evidence is shifted to the Applicants.

In light of the forgoing discussion, the Examiner concludes that the subject matter defined by the instant claims would have been obvious within the meaning of 35 USC 103(a).

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of

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ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fechner et al. WO 03/018495 in view of JP10158037 and Hikata et al. (US 6410633) and Beier et al. (Abstract and English translation of claims of WO 2003/062163).

Applicant claims a water insoluble silicate glass powder.

Determination of the scope and content of the prior art

(MPEP 2141.01)

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Fechner et al. teach in the abstract a water-insoluble antimicrobial silicate glass with the instantly claimed amounts of components in the glass:

(57) Abstract: The invention relates to an antimicrobial silicate glass with the following weight composition in wt. % based on oxides: SiO₂ 20 to 70, Na₂O 5 to 30, K₂O 0 to 5, P₂O₅ 1 to 15, B₂O₃ 0 to 10, CaO 4 to 30, AgO 0 to 2, ZnO 0 to 8, CuO 0 to 5, MgO 0 to 8, Al₂O₃ 0 to 7, CeO₂ 0 to 5, Fe₂O₃ 0 to 2 whereby the sum of the components AgO, CuO, CeO₂ is > 10 ppm, preferably ≥ 100 ppm and < 8 wt. %.

JP10158037 teaches a glass having 0.1 to 50 mol% alkali content such as soda lime glass, soda borosilicate glass and lead glass which is dipped into silver salts and heated to form glass with a region containing from 0.01 to 50 mol% silver ion density and 0.1 to 500 micron thickness on the glass surface (Abstract).

Beier et al. teach water insoluble antimicrobial glass powders with Ag, Zn, Cu, Ce, Te or I ions (Abstract and claims 1-2).

The reference of Hikata et al. is described in detail above and that discussion is hereby incorporated by reference.

Ascertainment of the difference between the prior art and the claims

(MPEP 2141.02)

1. The difference between the instant application and Fechner et al. is that Fechner et al. do not expressly teach water-insoluble glass powder wherein certain components are concentrated on the surface of the glass particles. This deficiency in Fechner et al. is cured by the teachings of JP10158037 and Hikata et al.

2. The difference between the instant application and Fechner et al. is that Fechner et al. do not expressly teach water-insoluble glass powder wherein certain

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components are Te ions. This deficiency in Fechner et al. is cured by the Teachings of Beier et al.

Finding of prima facie obviousness

Rational and Motivation (MPEP 2142-2143)

1. It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to make the composition of Fechner et al. into a glass powder with certain components concentrated on the glass particle surface, as suggested by JP10158037 and Hikata et al., and produce the instant invention.

One of ordinary skill in the art would have been motivated to do this because Fechner et al. teaches broadly silicate glass which encompasses silicate glass powder which is known in the art as taught by Hikata et al. and while Fechner et al. do not describe where the silver ion is concentrated in/on the glass particle, JP10158037 teaches means to concentrate the ions on the surface of the glass.

2. It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to make the composition of Fechner et al. into a glass powder with Te ions such as TeO₂ and produce the instant invention.

One of ordinary skill in the art would have been motivated to do this because the analogous art of Beier et al. teach adding TeO₂ to make antimicrobial glass powders. It is merely substituting one antimicrobial oxide for another.

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In light of the forgoing discussion, the Examiner concludes that the subject matter defined by the instant claims would have been obvious within the meaning of 35 USC 103(a).

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

Conclusion

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ernst V. Arnold whose telephone number is 571-272-8509. The examiner can normally be reached on M-F (6:15 am-3:45 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Ernst V Arnold/
Examiner, Art Unit 1616